

Příklad 1 – ukázka práce s datovými typy

Zdrojový kód

```
function void main() {  
    bool pravda = true;  
    bool nepravda = false;  
  
    bool a = (AND, pravda, nepravda);  
    bool b = (AND, pravda, (!, nepravda));  
    bool c = (OR, pravda, nepravda);  
    bool d = (OR, pravda, (!, nepravda));  
    bool e = (OR, (!, pravda), nepravda);  
  
    int f = 2;  
    int g = 5;  
    bool h = true;  
    bool ch = (!, h);  
    h = (+, (-, a), b);  
    int i = (*, f, g);  
    int j = (-, (+, (+, true, false), (-, 2, true)));  
  
    return;  
}
```

Stav zásobníku po provedení programu

0	0	SB
1	0	DB
2	0	PC
3	1	pravda
4	0	nepravda
5	0	a
6	1	b
7	1	c
8	1	d
9	0	e
10	2	f
11	5	g
12	1	h
13	0	ch
14	10	i
15	-2	j

Instrukce PI/0

0	JMP	0	1	43	OPR	0	8
1	INT	0	3	44	LOD	0	4
2	INT	0	1	45	OPR	0	2
3	LIT	0	1	46	LIT	0	0
4	STO	0	3	47	OPR	0	12
5	INT	0	1	48	STO	0	9
6	LIT	0	0	49	INT	0	1
7	STO	0	4	50	LIT	0	2
8	INT	0	1	51	STO	0	10
9	LOD	0	3	52	INT	0	1
10	LOD	0	4	53	LIT	0	5
11	OPR	0	2	54	STO	0	11
12	LIT	0	2	55	INT	0	1
13	OPR	0	8	56	LIT	0	1
14	STO	0	5	57	STO	0	12
15	INT	0	1	58	INT	0	1
16	LOD	0	3	59	LOD	0	12
17	LOD	0	4	60	LIT	0	0
18	LIT	0	0	61	OPR	0	8
19	OPR	0	8	62	STO	0	13
20	OPR	0	2	63	LOD	0	5
21	LIT	0	2	64	OPR	0	1
22	OPR	0	8	65	LOD	0	6
23	STO	0	6	66	OPR	0	2
24	INT	0	1	67	LIT	0	0
25	LOD	0	3	68	OPR	0	9
26	LOD	0	4	69	STO	0	12
27	OPR	0	2	70	INT	0	1
28	LIT	0	0	71	LOD	0	10
29	OPR	0	12	72	LOD	0	11
30	STO	0	7	73	OPR	0	4
31	INT	0	1	74	STO	0	14
32	LOD	0	3	75	INT	0	1
33	LOD	0	4	76	LIT	0	1
34	LIT	0	0	77	LIT	0	0
35	OPR	0	8	78	OPR	0	2
36	OPR	0	2	79	LIT	0	2
37	LIT	0	0	80	LIT	0	1
38	OPR	0	12	81	OPR	0	3
39	STO	0	8	82	OPR	0	2
40	INT	0	1	83	OPR	0	1
41	LOD	0	3	84	STO	0	15
42	LIT	0	0	85	RET	0	0

Příklad 2 – ukázka podmínek a cyklů

Zdrojový kód

```
function void main() {  
  
    const int a = 4;  
    int resIfElse;  
    int resSwitch;  
  
    if (OR, (<, a, 2), (>=, a, 4)) {  
        resIfElse = 1;  
    } else {  
        resIfElse = 2;  
    }  
  
    switch a {  
        case 1: {  
            resSwitch = 1;  
        }  
        case 2: {  
            resSwitch = 2;  
        }  
        case 3: {  
            resSwitch = 3;  
        }  
        default: {  
            resSwitch = 1000;  
        }  
    }  
  
    int c = 0;  
    for (i in 10) {  
        c = (+, c, i);  
    }  
  
    int d = 1;  
    do {  
        d = (*, d, 2);  
    } while (<, d, 20)  
  
    int e = d;  
    while (>, e, 0) {  
        e = (-, e, 2);  
    }  
  
    return;  
}
```

0	0	SB
1	0	DB
2	0	PC
3	4	a
4	1	resIfElse
5	1000	resSwitch
6	45	c
7	10	
8	32	d
9	0	e

Instrukce PL/0

0	JMP	0	1	49	OPR	0	8
1	INT	0	3	50	JMC	0	54
2	INT	0	1	51	LIT	0	1000
3	LIT	0	4	52	STO	0	5
4	STO	0	3	53	JMP	0	54
5	INT	0	1	54	INT	0	1
6	LIT	0	0	55	LIT	0	0
7	STO	0	4	56	STO	0	6
8	INT	0	1	57	INT	0	1
9	LIT	0	0	58	LIT	0	0
10	STO	0	5	59	STO	0	7
11	LOD	0	3	60	LOD	0	6
12	LIT	0	2	61	LOD	0	7
13	OPR	0	10	62	OPR	0	2
14	LOD	0	3	63	STO	0	6
15	LIT	0	4	64	LIT	0	1
16	OPR	0	11	65	LOD	0	7
17	OPR	0	2	66	OPR	0	2
18	LIT	0	0	67	STO	0	7
19	OPR	0	12	68	LIT	0	10
20	JMC	0	24	69	LOD	0	7
21	LIT	0	1	70	OPR	0	8
22	STO	0	4	71	JMC	0	60
23	JMP	0	26	72	INT	0	1
24	LIT	0	2	73	LIT	0	1
25	STO	0	4	74	STO	0	8
26	LOD	0	3	75	LOD	0	8
27	LIT	0	1	76	LIT	0	2
28	OPR	0	8	77	OPR	0	4
29	JMC	0	33	78	STO	0	8
30	LIT	0	1	79	LOD	0	8
31	STO	0	5	80	LIT	0	20
32	JMP	0	54	81	OPR	0	10
33	LOD	0	3	82	LIT	0	0
34	LIT	0	2	83	OPR	0	8
35	OPR	0	8	84	JMC	0	75
36	JMC	0	40	85	INT	0	1
37	LIT	0	2	86	LOD	0	8
38	STO	0	5	87	STO	0	9
39	JMP	0	54	88	LOD	0	9
40	LOD	0	3	89	LIT	0	0
41	LIT	0	3	90	OPR	0	12
42	OPR	0	8	91	JMC	0	97
43	JMC	0	47	92	LOD	0	9
44	LIT	0	3	93	LIT	0	2
45	STO	0	5	94	OPR	0	3
46	JMP	0	54	95	STO	0	9
47	LOD	0	3	96	JMP	0	88
48	LOD	0	3	97	RET	0	0

Příklad 3 – ukázka práce s polem, volání funkce s parametry a návratovou hodnotou

Zdrojový kód

```
function int[10] getArray() {
    int[10] a;

    int it = 0;
    for (i in a) {
        it = (+, it, 1);
        i = it;
    }

    return a;
}

function int pow(int a, int b) {
    int temp = 1;
    for (i in b) {
        temp = (*, temp, a);
    }

    return temp;
}

function void main() {
    int a = 2;
    int b = 5;

    int[10] arr = (getArray);
    int pow = (pow, a, b);

    return;
}
```

0	0	SB
1	0	DB
2	0	PC
3	2	a
4	5	b
5	1	arr[0]
6	2	
7	3	
8	4	
9	5	
10	6	
11	7	
12	8	
13	9	
14	10	arr[9]
15	2	kopie a
16	5	kopie b
17	32	pow

Instrukce PL/0

0 JMP 0 117
1 INT 0 3
2 INT 0 10
3 LIT 0 0
4 STO 0 3
5 INT 0 1
6 LIT 0 0
7 STO 0 13
8 LOD 0 13
9 LIT 0 1
10 OPR 0 2
11 STO 0 13
12 LOD 0 13
13 STO 0 3
14 LOD 0 13
15 LIT 0 1
16 OPR 0 2
17 STO 0 13
18 LOD 0 13
19 STO 0 4
20 LOD 0 13
21 LIT 0 1
22 OPR 0 2
23 STO 0 13
24 LOD 0 13
25 STO 0 5
26 LOD 0 13
27 LIT 0 1
28 OPR 0 2
29 STO 0 13
30 LOD 0 13
31 STO 0 6
32 LOD 0 13
33 LIT 0 1
34 OPR 0 2
35 STO 0 13
36 LOD 0 13
37 STO 0 7
38 LOD 0 13
39 LIT 0 1
40 OPR 0 2
41 STO 0 13
42 LOD 0 13
43 STO 0 8
44 LOD 0 13

45 LIT 0 1
46 OPR 0 2
47 STO 0 13
48 LOD 0 13
49 STO 0 9
50 LOD 0 13
51 LIT 0 1
52 OPR 0 2
53 STO 0 13
54 LOD 0 13
55 STO 0 10
56 LOD 0 13
57 LIT 0 1
58 OPR 0 2
59 STO 0 13
60 LOD 0 13
61 STO 0 11
62 LOD 0 13
63 LIT 0 1
64 OPR 0 2
65 STO 0 13
66 LOD 0 13
67 STO 0 12
68 LOD 0 3
69 STO 0 -10
70 LOD 0 4
71 STO 0 -9
72 LOD 0 5
73 STO 0 -8
74 LOD 0 6
75 STO 0 -7
76 LOD 0 7
77 STO 0 -6
78 LOD 0 8
79 STO 0 -5
80 LOD 0 9
81 STO 0 -4
82 LOD 0 10
83 STO 0 -3
84 LOD 0 11
85 STO 0 -2
86 LOD 0 12
87 STO 0 -1
88 RET 0 0
89 INT 0 3

90 INT 0 1
91 LOD 0 -3
92 STO 0 3
93 INT 0 1
94 LOD 0 -2
95 STO 0 4
96 INT 0 1
97 LIT 0 1
98 STO 0 5
99 INT 0 1
100 LIT 0 0
101 STO 0 6
102 LOD 0 5
103 LOD 0 3
104 OPR 0 4
105 STO 0 5
106 LIT 0 1
107 LOD 0 6
108 OPR 0 2
109 STO 0 6
110 LOD 0 4
111 LOD 0 6
112 OPR 0 8
113 JMC 0 102
114 LOD 0 5
115 STO 0 -1
116 RET 0 0
117 INT 0 3
118 INT 0 1
119 LIT 0 2
120 STO 0 3
121 INT 0 1
122 LIT 0 5
123 STO 0 4
124 INT 0 10
125 CAL 0 1
126 INT 0 1
127 LOD 0 3
128 STO 0 15
129 INT 0 1
130 LOD 0 4
131 STO 0 16
132 INT 0 1
133 CAL 0 89
134 RET 0 0